10. ANTHOCEROS CRISPULUS Douin.

Collected in September, 1913, on a moist bank, at Highlands, Monmouth County, New Jersey, by Miss C. C. Haynes and the writer. The third North American station for the species. The first stations to be recorded were Andover and West Hartford, Connecticut, where the plant was discovered in 1911 by Miss Annie Lorenz[1]. In all probability it will be found to have a wide distribution in North America, as well as in Europe, when the characters separating it from *A. punctatus* L. are better understood.

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A NEW SPECIES OF BLASTENIA

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Blastenia (Sect. *Eublastenia*, A. Zahlbr.) **herrei** Hasse, n. sp. Thallus scaly-crustaceous, subdeterminate, pale greenish ash-color; hypothallus pale, indistinct, KHO—; disk crimson to blackening. Apothecia mostly slightly elevated, 0.5 to 1.25 mm. wide; disk flat with a concolorous, thin, slightly prominent, entire or wavy and even sinuate proper margin. Epithecium granulose, dark violet-purple; paraphyses stout, loose, slightly thickened above and with one or two sub-capitate septa, some forked above; thecium pale sordid roseate; hypothecium of same hue, but darker; asci more or less inflated clavate, their apices reaching the sharply defined colored surface of the epithecium, 8-spored. Spores ovoid-ellipsoid to oblong ellipsoid, both ends rounded, polarilocular, connected by a delicate isthmus, this and the polar cells, approximate in a few spores, are at first indicated by minute oil cells that disappear after KHO, exospore thin; spores 14μ to 19μ long, 8μ to 12μ thick (Dr. Herre's measurements are 10μ long, 5μ to 7μ thick). Hym. gel. with iodine stains a handsome blue, with KHO violet-purple. Spermogones not seen.

On bark, Ten Mile Tp., Whatcom Co., Washington. Collected by Dr. A. C. Herre, for whom it is named.

FURTHER OBSERVATIONS ON THE TEXAN OXYMITRA (TESSELLINA)

MARSHALL A. HOWE

In a recent number of THE BRYOLOGIST (**17**: 72–75) the writer announced the discovery in Texas of a Ricciaceous hepatic representing a primarily Mediterranean genus not before recorded for North America. The more or less complicated synonymy of the genus and of its single currently recognized species was there discussed, and the peculiarities of the Texan plant were there considered insufficient to distinguish it specifically from *Oxymitra paleacea*, better known as *Tessellina pyramidata*, the one recognized species of the genus. However, a

[1] See Evans, Rhodora **14**: 16. 1912.

foot-note appended to the final paged proof of the article recorded the detection of a character that might justify the specific segregation of the Texan plant. The Texan specimens, sent in a living condition by Dr. M. S. Young, bore mature sporogonia, and, as no antheridia were discovered, the plants were at first assumed to be dioicous, like the plants of southern Europe and northern Africa. It was remarked that "antheridial individuals have not been found," and that "it is hoped that these will soon be met with in Texas or that they may appear in the thriving cultures of the plant that have been established in the propagating houses of the New York Botanical Garden."

About the middle of September it was noted that these living specimens at the New York Botanical Garden showed numerous young sporogonia and also that there were no obvious antheridial receptacles. Cross sections of the thalli showed that rather inconspicuous antheridia were present intermingled with the archegonia, the elevated cylindric antheridial ostioles looking much like the snouts of the archegonial or sporogonial involucres, though remaining more slender. It might not be safe to prophesy what a study of the living *Oxymitra* of other parts of the world might disclose in respect to this character, but an examination of such dried specimens as are available (often not at all satisfactory for the determination of antheridia) and a perusal of the accessible literature on the subject would indicate that *Oxymitra* as elsewhere known is a dioicous plant. It may be remarked that even when, as sometimes happens, the Texan plant produces numerous antheridia and only occasional archegonia, the antheridia and their involucres remain essentially free, like the archegonial involucres, in the median sulcus, and are not imbedded in a sharply defined antheridial receptacle as is the case in the dioicous *Oxymitra paleacea*. The large spores and the somewhat peculiarly thickened rays of the "stars" bounding the stomata have been alluded to in the preceding paper. Under the circumstances, it seems best to give the Texan plant a distinctive specific name and its more important diagnostic characters are summarized below:

Oxymitra androgyna sp. nov.

Thalli 1-3 times dichotomous, mostly 8–18 mm. long, loosely gregarious or closely aggregated in more or less rosette-like masses; principal segments oblong quadrate-oblong, or subovate, 4–7 mm. broad, 2–3 mm. thick, ⅓–½ of this thickness occupied by the air-chamber layer, the median sulcus deep, acute, and sharply defined; latero-ventral scales numerous and conspicuous, projecting far beyond the margins, lanceolate or ovate with long-acuminate or filiform-acuminate apices, 2–4 mm. long, hyaline throughout, or reddish brown at base; rays of the stomatal stars strongly thickened, ovoid, dome-shaped, or lanceolate-acuminate in surface view; synoicous, with an occasional tendency to dioicism; antheridia intermingled with the archegonia at the bottom of the median sulcus or often somewhat laterally disposed in relation to the archegonia, the elevated antheridial ostioles cylindric or conic-cylindric, mostly 0.5–0.7 mm. high and 85–110μ broad, decolorate or light brown; sporogonial involucres rostrate, obscurely trigonous-pyramidal, conic-cylindric, or cupolate-ovoid, 1.1–2.0 mm. high, 0.8–1.0 mm. broad, lightly 8–12-ribbed; spores finally very dark and opaque, 125–175μ in maximum diameter, angular, the outer face bearing areolae 24–35μ broad, exhibiting in profile a few verrucae 2–5μ high, the inner faces smooth.

The type material is preserved in the herbarium of the New York Botanical Garden, in the Propagating House of which it was collected on September 23,

1914, this material having been grown from specimens sent from Austin, Texas, by Dr. M. S. Young, in February, 1914. A photograph of sterile specimens from the same culture was published in the former number of THE BRYOLOGIST (**17:** 72).

NEW YORK BOTANICAL GARDEN.

NOTES ON THE SURVIVAL OF EXTREME DROUGHT BY CERTAIN MOSSES

F. L. PICKETT

Bloomington is in the middle southern portion of Indiana, in the limestone region. For three or more miles in any direction the town is surrounded by rough country, hills and valleys and many narrow ravines, where the underlying stone is only partly hidden by a light layer of clay. This area was formerly covered with hardwood timber, but this has mostly been cut away, and the portions not fit for cultivation and grazing are covered with second growth timber and underbrush. These partly sheltered hillsides are favorite fields for many of the common mosses, especially those growing on soil and exposed stone. The following forms are found in abundance, especially on south and southwest exposures: *Polytrichum commune*, *P. Ohioense*, *Dicranum scoparium*, *Dicranella heteromalla*. A little more under the timber *Catharinaea undulata* and *Leucobryum glaucum* are common. On the exposed rocky points may always be found *Grimmia apocarpa*, *Orthotricum Lescurii*, *Rhytidium rugosum* and *Hedwigia albicans*. Common on trees in the same localities are *Leucodon julaceous*, *L. brachypus*, *Forsstroemia trichomitria* and *Drummondia clavellata*. On the bases of the same trees the familiar mats of *Anomodon attenuatus* and *Thelia hirtella* are common. In moister, shaded places on the hill-sides *Bartramia pomiformis* and *Aulacomnium heterostichum* are abundant. All these forms except *Leucobryum glaucum* and *Rhytidium rugosum* are regularly found freely fruiting in season.

The summer of 1913 was marked by unusually severe weather conditions. March 23–27 was a flood period with 9.2 in. of rainfall. Then up to April 30 further rainfall amounting to 5.14 in. kept things in good condition. But from May 1 to September 11 only 8.7 in. of precipitation was recorded. During this time periods of specially severe conditions should be noted. There was but .53 in. of rainfall during May, 2.14 in. between May 28 and July 11, and 1.25 in. between July 25 and August 21. The slight rainfall of the summer was scattered through many short showers, mostly less than .5 in. and many between .1 in. and .15 in., leaving scarcely a trace of moisture when they had passed. Along with the drought high temperatures prevailed, as shown by the following abstract from the record of the U. S. W. B. station at Bloomington.

	Maximum	*Mean maximum*
May	95° F.	77.9° F.
June	103°	89.7°
July	107.5°	94°
August	101°	91.8°
September, up to 12	102°	95°